

USSR

UDC 539.612.2:538.23

KURDYUMOV, N. N., and POTEMKIN, V. V., Moscow State University
Imeni M. V. Lomonosov

"Dependence of Noise of Thin Magnetic Films on Their Static Parameters"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 3,
Mar 71, pp 663-664

Abstract: Experiments were performed with circular films made by vacuum sputtering in the presence of a constant magnetic field with a spot diameter of 10 mm and magnetic layer thickness of 2,000 Å. The noise properties were studied as functions of the critical fields H_k and H_c (anisotropy field and coercive force), forms of static hysteresis loop, and dispersion parameter $\Delta_{0.7}$. The results indicated that the primary cause for

fluctuations on the transverse component of the magnetic flux upon cyclical switching of the thin films consists of the fluctuations involved in individual switching events, the volumes of local areas opposite directions, as well as fluctuations

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USSR

KURYUMOV, N. N., and POTEKIN, V. V., et al., Fizika Metallov i Metallovedeniye, Vol 31, No 3, Mar 71, pp 663-664

in local portions of the film of values of critical fields at which switching occurs. Films with most nearly rectangular hysteresis loops have the best noise characteristics.

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UDC 539.612.2:538.23

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KURYUMOV, N. N., and POTEMKIN, V. V., et al., Fizika Metallov i Metallovedeniye, Vol 31, No 3, Mar 71, pp 663-664

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UDC: 539.216.2.001.5:538

KURDYUMOV, N. N., POTEMKIN, V. V.

"Spectra of Alternating Magnetization of Magnetic Thin Films"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 127-130

Abstract: A spectral study is made of signals resulting from the electromotive force of transverse induction in flat ferromagnetic films when they are subjected to alternating magnetization by homogeneous fields of harmonic form along the preferred axes. The experiments were done on 79 MNA Permalloy films 2000 Å thick made by vacuum vaporization. It was found that the spectral characteristics of the emf signals induced by the films are appreciably dependent on the conditions of magnetic reversal. When the amplitudes of the magnetizing field are less than the field of anisotropy of the film, the signal spectrum varies with a change in the direction of magnetic reversal. When magnetic reversal is parallel to the unfavorable axis of the film, the second harmonic of the magnetizing frequency predominates in the signal spectrum. When magnetization is along the preferred axis, there is either no signal, or a weak signal with

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USSR

KURDYUMOV, N. N., POTEMKIN, V. V., Radiotekhnika i Elektronika, Vol 16, No 1,
Jan 71, pp 127-130

a spectrum close to that of the magnetizing field. When the amplitudes of the magnetizing field exceed the field of anisotropy, the emf signals have spectra whose characteristics depend on the parameters of the magnetizing field. In this case, regardless of the direction of the magnetizing field, the signal spectra have an extremum envelope and consist of only odd harmonics of the magnetizing frequency. The signal spectra for magnetization along the preferred axis are considerably wider and of lower intensity than for the case of magnetization along the unfavorable axis. These relationships are explained on the basis of the anisotropic and dynamic properties of the films. In conclusion, the authors thank R. V. Telesnin and his colleagues for discussing the results.

2/2

UDC 533.951538.4

USSR

SAMARSKIY, A. A., Corresponding Member of the Academy of Sciences USSR,
KURDYUMOV, S. SP., KULIKOV, YU. N., LESKOV, L. V., POPOV, YU. P., SAVICHEV,
V. V., and FILIPPOV, S. S., Institute of Applied Mathematics, Academy of
Sciences USSR, Moscow

"Magnetohydrodynamic Model of Unsteady Plasma Acceleration"

Moscow, Doklady Akademii Nauk SSSR, Vol 206, No 2, 1972, pp 307-310

Abstract: During an experimental study of pulsed plasma accelerators, some physical phenomena were discovered which cannot be explained within the framework of existing simplified models: viz., the existence of a laminated structure for the ejected plasma formation, motion counter to the accelerating ampere force, the presence of high-multiplicity ions in the plasma, heating up of the plasma to high temperatures in narrow sections, etc. Therefore, the authors undertook to calculate the dynamics of plasma formations in pulsed accelerators, with allowance for the spatial distribution of the physical characteristics of the plasma, radiation, and nonlinear effects in the plasma. As a result of computer-aided calculations density, velocity, temperature,

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SAMARSKIY, A. A., et al., Doklady Akademii Nauk SSSR, Vol. 206, No 2, 1972, pp 307-310

current, and the magnetic field along the direction of motion were determined. It is shown that there are nonlinear mechanisms leading to the appearance of heated current layers (T-layers) in the medium, separated by intervals of relatively cold gas. The T-layers evolve and generate shock waves which propagate on both sides, and this leads in turn to the production of new T-layers, the formation of plasma clusters and their interaction, the return motion of the substance, and the appearance of closed current loops in the plasma. A study is made of the energy balance in the accelerator and the time redistribution of individual forms of energy.

2/2

USSR

UDC 621.372.8

VOSKRESENSKIY, G. V., KURDYUMOV, V. N.

"Study of an Electron Ring Passing Near the Junction of Two Circular Wave Guides"

Gor'kiy, Izvestiya Vysshikh Uchebnykh Zavedeniy, Radiofizika, Vol XIV, No 5, 1971, pp 778-787

Abstract: A study is made of the spectral characteristics of radiation accompanying drift of a charged or current ring passing near elementary inhomogeneity in a wave guide, and the total radiation losses are estimated. The losses of a thin uniformly charged ring are proportional to the kinetic energy of the source. For a ring current of given magnitude the radiation losses are proportional to the third power of the ring energy.

The contributions of waves of different polarization to the total losses of the charged ring moving along the axis of the structure and rotating around the axis are compared. If the longitudinal energy of the ring is γ and the dimensionless transverse velocity is $\beta_{\perp}$, the total energy losses to excitation of the electric waves W^e and the magnetic waves W^m are related by the expression

1/2

VOSKRESENSKIY, G. V., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Radiofizika, Vol XIV, No 5, 1971, pp 778-787

$$W^m = W^e \frac{w_\infty^m}{w_\infty^e} \left(\frac{\rho}{a} \gamma \beta_\phi \right)^2.$$

Thus, the excitation of the magnetic waves is always less than the excitation of the magnetic waves since the values of w_∞^m / w_∞^e and ρ/a are less than 1 if we consider the relation valid for ring energies γ where the losses reach their asymptotic values w_∞^e and w_∞^m . The value of $\gamma \beta_\phi$ remains invariant and cannot exceed one during acceleration of the rotating charged ring.

USSR

UDC: 621.372.823:621.385.63

VOSKRESENSKIY, G. V., KURDYUMOV, V. N.

"Radiation From an Electron Ring Flying Past the Junction of Two Circular Waveguides"

Tr. Radiotekhn. in-ta AN SSSR (Works of the Radio Engineering Institute, Academy of Sciences of the USSR), 1970, No 2, pp 60-76 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B144)

Translation: The authors compute the emission energy losses of a thin electron ring flying uniformly past an elementary inhomogeneity in a circular waveguide. It is shown that the losses of the charged ring increase linearly as a function of its energy; the losses of a current ring increase as the cube of the energy. Five illustrations. Resumé.

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Mechanical Properties

USSR

UDC 669.017:620.18

KARSANOV, G. V., ~~KURDYUMOVA, G. G.~~, MIL'MAN, Yu. V., PONOMAREV, Yu. N.,
SARZHAN, G. F., TREFILOV, V. I., FIRSTOV, S. A., KHAZANOVA, T. P., and YUSHKO,
V. G., Moscow, Kiev

"Investigation of the Structural Condition and Mechanical Properties of a Two-
Phase Alloy Containing Chromium and Nickel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 71, pp 67-74

Abstract: The structure of a chromium alloy containing 34.4 wt % Ni was investigated by methods of electron-microscopy of thin foils and X-ray and metallographic analyses, after being subjected to various thermal and thermo-mechanical treatments. The investigation data are compared with mechanical bending test data and analyzed from the standpoint of dislocation concepts and ideas of the character of the electronic structure of transition metals. Reference is made to microphotographs of the structure of the hardened alloy Cr - 34.4 Ni and its structural changes resulting from annealing at different temperatures and to diagrams showing effects of annealing at 900°C on mechanical properties, lattice parameter, hardness, and relative quantities of α - and γ - phases. The probability is indicated of increasing the strength

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USSR

KARSANOV, G. V., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 71, pp 67-74

characteristics of the investigated alloy at the expense of precipitation strengthening. Five illustr., 12 biblio. refs.

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UDC: 669.28'849'788

USSR

FRIDMAN, E. I., SHCHERBIN, A. A., ABALIMOV, A. V., MAL'TSEV, K. V., MIL'MAN, Yu. V., KURDYUMOVA, G. G.

"All-Union Scientific Research and Design Institute of Refractory Metals and Hard Alloys"

"A Molybdenum-Based Alloy"

Moscow, Otkrytiye, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334270, Division C, filed 23 Sep 70, published 25 Mar 72, p 124.

Translation: This patent certificate introduces a molybdenum-based alloy which contains rhenium. As a distinguishing feature of the patent, the physicochemical properties of the alloy are improved by adding carbon, taking the components in the following proportions in percent:

rhenium 35-50
carbon 0.01-0.2
molybdenum 100

UNCLASSIFIED

PROCESSING DATE--13NOV70

1/2 013
TITLE--DETERMINATION OF THE MATRIX ELEMENT OF THE DIPOLE MOMENT OF AN A
PRIME2 SIGMA-X PRIME2 II ELECTRON TRANSITION IN A SIF MOLECULE -U-
AUTHOR-(04)-KUZYAKOV, YU.YA., OVCHARENKO, I.YE., KUZHENKO, N.YE.,
KURDYUMOVA, I.N.
COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 555-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SILICON COMPOUND, FLUORIDE, ABSORPTION SPECTRUM, MATRIX
ELEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0327

STEP NO--UR/0368/70/012/003/0555/0557

CIRC ACCESSION NO--AP0119314

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0119314

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRON ABSORPTION SPECTRUM WAS TAKEN OF THE SIF MOL. BY USING IMPACT TUBE TECHNIQUE TO PREP. A SUFFICIENT AMT. OF GASEOUS SIF. BY STARTING FROM THE EXPTL. INTENSITY DATA, THE SQUARED MATRIX ELEMENT OF THE DIPOLE MOMENT OF A PRIME2 SIGMA-X PRIME2 II ELECTRON TRANSITION IS 5.9 PLUS OR MINUS 0.6 AT. UNITS. THIS VALUE CORRESPONDS TO AN OSCILLATOR STRENGTH OF (4.1 PLUS OR MINUS 0.4) TIMES 10 PRIME NEGATIVE1. REAL ACCURACY IN DETG. THE MATRIX ELEMENT CAN BE CONSIDERABLY SMALLER OWING TO SYSTEMATIC ERRORS INVOLVED IN SUCH QUANTITIES AS HEATS OF FORMATION OF SIF, SIF SUB2, ETC. AND FRANCK CONDON FACTORS.

UNCLASSIFIED

USSR

UDC 576.314

IVANOV, B. N., KONOSHENKO, A. I., and KURELIA, G. A., Chair of Biophysics,
Moscow State University

"Number and Properties of Fixed Negative Charges in the Cell Wall"

Moscow, Biologicheskkiye Nauki, No 12, 1970, pp 38-40

Abstract: Fixed negative charges were studied in cell membranes of the freshwater algae *Nitella flexilis* by means of potentiometric titration. Two discontinuities appeared on the titration curves, suggesting that the cell wall has two basic types of fixed ionogenic groups with different ionization constants. The position of the first discontinuity relative to the ordinate showed that some of the charged groups in the membrane were active in a neutral or even weakly acid medium. The number of these charges, determined from the titration curves, was 0.5 to 0.6 meq/mg of air-dried membrane. The second discontinuity was around 1.4 to 1.8 meq/mg. Most of the fixed negative charges were ionized carboxyl radicals of polyuronic acids. The existence of two groups with different ionization constants can be interpreted in two ways. Either the polyuronic acids in the cell wall are in different states (depending, for example, on the length of the macromolecule chain) so that the carboxyl radical possess different capacities for ionization, or some of the charges are not bound with the uronic components of the membrane. 1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--POTENTIOMERIC ANALYSIS OF THE DYNAMICS OF SULPHIDE PHOTOOXIDATION
BY PHOTOSYNTHETIZING BACTERIA -U-
AUTHOR-(02)-GULANYAN, S.A., KURELLA, G.A.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 259-263

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--POTENTIOMETER, SODIUM SULFIDE, BACTERIA, PHOTOSYNTHESIS, LEAD
SULFIDE, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1983/1412

STEP NO--UR/0220/70/039/002/0257/0263

CIRC ACCESSION NO--AP0054275

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054275

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SULPHIDE CONTENT IN LIQUID MEDIA WAS DETERMINED WITH ELECTRODE BASED ON NATURAL PBS CRYSTAL. THE CONDITIONS FOR ELECTRODE CALIBRATION WITH SODIUM SULPHIDE SOLUTIONS WERE ESTABLISHED. NORMAL SULPHIDE FUNCTION (29 MV-PS AT ROOM TEMPERATURE) REQUIRED STATIC PH OF THE MEDIUM. THE ELECTRODE CAN BE USED FOR ESTIMATION OF SULPHIDE ACTIVITY AT PH IS GREATER THAN 5. THE AVAILABILITY AND ADVANTAGES OF THIS METHOD WERE DEMONSTRATED BY STUDYING THE KINETICS OF CHANGING ACTIVITY OF SUPHIDE SOLUTIONS DURING NA SUB2 S PHOTOOXIDATION BY THE GREEN SULPHUR BACTERIA.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--POTENTIOMERIC ANALYSIS OF THE DYNAMICS OF SULPHIDE PHOTOOXIDATION
BY PHOTOSYNTHETIZING BACTERIA -U-
AUTHOR-(02)-GULANYAN, S.A., KURELLA, G.A.

COUNTRY OF INFO--USSR

SOURCE--MIKROBIOLOGIYA, 1970, VOL 39, NR 2, PP 259-263

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--POTENTIOMETER, SODIUM SULFIDE, BACTERIA, PHOTOSYNTHESIS, LEAD
SULFIDE, ELECTRODE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1412

STEP NO--UR/0220/70/039/002/0259/0263

CIAL ACCESSION NO--AP0054275

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054275

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SULPHIDE CONTENT IN LIQUID MEDIA WAS DETERMINED WITH ELECTRODE BASED ON NATURAL PBS CRYSTAL. THE CONDITIONS FOR ELECTRODE CALIBRATION WITH SODIUM SULPHIDE SOLUTIONS WERE ESTABLISHED. NORMAL SULPHIDE FUNCTION (29 MV-PS AT ROOM TEMPERATURE) REQUIRED STATIC PH OF THE MEDIUM. THE ELECTRODE CAN BE USED FOR ESTIMATION OF SULPHIDE ACTIVITY AT PH IS GREATER THAN 5. THE AVAILABILITY AND ADVANTAGES OF THIS METHOD WERE DEMONSTRATED BY STUDYING THE KINETICS OF CHANGING ACTIVITY OF SUPHIDE SOLUTIONS DURING NA SUB2 S PHOTOOXIDATION BY THE GREEN SULPHUR BACTERIA.

UNCLASSIFIED

USSR

UDC 612.273.2+612.274

KURENKOV, G. I., and YAKHONTOV, B. O., Scientific Research Institute of Water Transport Hygiene, Ministry of Health USSR

"Oxygen Consumption During Strenuous Physical Exercise at High Atmospheric Pressure"

Leningrad, Fiziologicheskii Zhurnal SSSR, No 12, 1971, pp 1,613-1,616

Abstract: The dynamics of external respiration and gas exchange was studied in 8 persons pedaling bicycle ergometer in a compression chamber where they were exposed to air pressure of 5 atm. The intensity of the exercise was stepped up 150 kgm every 5 min to 1,200 kgm/min. There was a linear increase in oxygen consumption. The absolute values of oxygen consumption were significantly higher at each load. The respiratory rate was slower, and the depth of respiration was greater than at normal atmospheric pressure. Another series of experiments designed to determine whether the increased oxygen consumption was related to the oxygen demand showed that the total oxygen demand with a standard load of kgm/min increased by 67% on the average. Thus, work under high pressure requires a higher energy level due to the intensification of respiration which increases the oxygen demand, consumption, and debt.

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Acc. Nr. **#0038580**

Abstracting Service: **70**
CHEMICAL ABST.

Ref. Code
UK0000

K

57370a Preparative fractionation of copolymers of acrylamide with sodium maleate. Myagchenkov, V. A.; Kurenkov, V. E.; Kuznetsov, E. V.; Frenkel, S. Ya. (S. M. Kirov Chem.-Tech. Ind. Inst., Kazan, USSR). *Eur. Polym. J.* 1970, 6(1), 61-8 (Eng).
Compn. distribution curves were obtained for 4 acrylamide-Na maleate copolymers. Efficient compn. fractionation was obtained partially because of the presence of the ionic groups in the copolymer macromols. The compn. distribution curves obtained under non-isoionic conditions and in a system contg. 15% NaCl indicated that the copolymn. under non-isoionic conditions is anomalous. The addn. of NaCl stabilizes the relative reactivities of the comonomers. **RCDL**

REEL/FRAME
19731759

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KURENKOVA, A.N.

WORKING ABILITY AND THE
CIRCULATION OF BLOOD

31 Mar 71

101

PROCEEDINGS

130, 22A

1. The entire brain participates in intellectual work, but the "epicenter" of effort shifts over time. Initially it is associated with the visual centers; the task performed in these experiments required the subjects to make frequent use of a correspondence table between letters and numbers -- as the task progressed this correspondence tended to be memorized; later, as the task is "interiorized," this epicenter shifts to the frontal portions of the brain.

2. The entire brain participates in intellectual work, but the "epicenter" of effort shifts over time. Initially it is associated with the visual centers; the task performed in these experiments required the subjects to make frequent use of a correspondence table between letters and numbers -- as the task progressed this correspondence tended to be memorized; later, as the task is "interiorized," this epicenter shifts to the frontal portions of the brain.

3. These tendencies are more clearly observed in healthy persons and are less evident in hypertensive patients.

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31 Mar 71

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DEMENTYEV, Ye. M., et al., Voprosy Psichologii, vol 6, November 70, pp 86-93
tends to fall off halfway through the initial stage of work and remain at a low level thereafter. The percentage increase in normal subjects is about ten percent. In hypertensive patients nine percent or less.

The authors draw the following conclusions.

1. Simultaneous investigation of psychological and physiological factors is a valuable tool in distinguishing different stages of intellectual activity.

2. The entire brain participates in intellectual work, but the "epicenter" of effort shifts over time. Initially it is associated with the visual centers; the task performed in these experiments required the subjects to make frequent use of a correspondence table between letters and numbers -- as the task progressed this correspondence tended to be memorized; later, as the task is "interiorized," this epicenter shifts to the frontal portions of the brain.

3. These tendencies are more clearly observed in healthy persons and are less evident in hypertensive patients.

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1/2 030 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ACID BASE BALANCE OF THE BLOOD OF PATIENTS WITH CHRONIC PNEUMONIA
DEPENDING UPON THE STAGE OF THE DISEASE --U-
AUTHOR--KURENKOVA, I.G.

COUNTRY OF INFO--USSR **K**

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 4, PP 90-94

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD CHEMISTRY, PNEUMONIA, LUNG, METABOLISM, RESPIRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0030

STEP NO--UR/0504/70/042/004/0090/0094

CIRC ACCESSION NO--AP0114430

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0114430

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR STUDIED ACID BASE
BALANCE OF THE BLOOD OF 99 PATIENTS WITH CHRONIC PNEUMONIA OF DIFFERENT
STATES OF THE DISEASE. NO SUBSTANTIAL DEVIATIONS FROM THE NORM WERE
REVEALED IN PATIENTS WITH A RESTRICTED AFFECTON OF THE LUNGS.
DIFFERENT DISORDERS OF THE ACID BASE BALANCE; RESPIRATORY METABOLIC
ACIDOSIS, RESPIRATORY ACIDOSIS, COMPENSATED METABOLIC ALKALOSIS WERE
FOUND IN PATIENTS WITH DIFFUSE AFFECTON OF THE LUNGS. FACILITY:
AKADEMICHESKAYA GRUPPA AKAD. AMN SSSR N. S. MOLCHANOVA, Leningrad.

UNCLASSIFIED

USSR

UDC 541.183.26, 541.182.644, 546.287

SLINYAKOVA, I. B., KUBENNAYA, L. I., and NEYMARK, I. YE., Institute of Physical Chemistry imeni L. V. Pisarzhevskiy, Academy of Sciences UkrSSR

"The Synthesis and Adsorption Properties of Mixed Silico-Polyhydridesiloxane Adsorbents"

Kiev, Ukrainskiy Khimicheskii Zhurnal, Vol 38, No 9, Sep 72, pp 900-904

Abstract: Silico-polycydridesiloxane adsorbents were prepared by coprecipitation of gels of polyhydridesiloxane and silicic acid upon acid hydrolysis with HCl of a mixture of triethoxysilane and tetraethoxysilane according to $\text{HSi(OEt)}_3 + \text{Si(OEt)}_4 + 7\text{H}_2\text{O} \rightarrow \text{HSi(OH)}_3 + \text{Si(OH)}_4 + 7\text{EtOH}$. Combined polycondensation of HSi(OH)_3 and Si(OH)_4 took place. By varying the ratio of HSi(OEt)_3 to Si(OEt)_4 , gels with different ratios of Si-H to Si-OH groups were obtained. The xerogels derived from the lyogels exhibited different properties depending on whether the latter were washed with hexane or dioxane before drying. It was established by viscosimetry that the process of gel formation slowed down with an increasing ratio of Si-H groups. Isotherms of adsorption of hexane, MeOH, and H_2O vapors on the xerogels were determined.

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USSR

SLINYAKOVA, I. B., et al., Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 9, Sep 72, pp 900-904

Reduction of the content of $\equiv\text{Si-H}$ favored formation of structures with fine pores, reduced the total pore volume, and lowered the limiting adsorption volume of the pores for hydrocarbons (C_6H_{14} and PhH). With an increasing content of $\equiv\text{Si-OH}$ groups the adsorption capacity for MeOH and H_2O increased at low relative pressures, but decreased in the capillary condensation range because of changes in the pore structure that involved formation of finer pores.

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USSR

UDC 539.389.3

DRUZHININ, V. V., DURNEV, V. D., and KURENNYKH, L. K., Verkh-Izets Metal-lurgical Plant, Sverdlovsk, and Scientific Research Institute LEO "Elek-trosila," Leningrad

"Aging Electrical Steel in a Magnetic Field"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1324-1325

Abstract: In the operation of magnetic systems of electrical machines, electrical steel is subjected not only to the action of increased temperature but also to the action of a magnetic field. For this reason it was deemed advantageous to study the aging of electrical steel in a magnetic field inasmuch as there are no data about this question in the literature.

A low-alloy hot-rolled steel was chosen for experimentation with samples made from strip cut to size 0.5 x 250 mm with a total weight of 1 kg. Specific losses were measured by the absolute wattmeter method in a small Epshteyn unit. Aging samples in the presence of a magnetic field was done by two methods:

1/3

USSR

DRUZHININ, V. V., et al, Fizika Metallov i Metallovedeniye, Vol 10, No 6, Dec 70, pp 1324-1325

1. A special Epshteyn unit was made with thermally insulated magnetic and measuring coils. After determining the initial specific losses P_0 a sample was placed in the thermostat, a part of the Epshteyn unit, and an alternating current was sent to the magnetic coil. After maintaining the Epshteyn unit at 120°C for 120 hours the sample was taken from the thermostat and specific loss measured at room temperature P_1 . The aging coefficient was determined by the formula: $(P_1 - P_0)100\%/P_0$. A second batch of identical samples also were aged in the unit but without switching on the magnetizing current.

2. A sample was placed in a solenoid which was then placed in the thermostat. Magnetization of the sample was conducted in an open magnetic circuit. The external magnetic field was constant (1000 and 3000 a/m) and variable (3000 a/m) at a frequency of 50 Hz. Specific loss was determined in the same manner as described above.

For samples aged by method 1, those having a $P_0 = 2.80 - 3.00$ w/kg were then aged by the second method. From the data obtained it was found that both

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USSR

DRUZHININ, V. V., et al, Fizika Metallov i Metallovedeniye, Vol 30, No 6, Dec 70, pp 1324-1325

constant and variable magnetic fields increase aging of electrical steel. The variable magnetic field increased aging by a two-three-fold magnitude increase in the aging coefficient. The effect of the constant field was much weaker but did occur. The effect of the magnetic field on the aging process may be caused by several reasons. In a constant field one of the causes may be the residual magnetization of magnetic particles. Here the greater loss was associated with the effect of free strips around inclusions which have an effect on the magnetic structure of the matrix. Under the action of a variable magnetic field the process of aging, in all probability, is significantly activated by periodic magnetostrictive strains of the crystal lattice. An increase in the aging coefficient in a magnetic field was also associated with interaction of the external field with the magnetic field of dislocations which accompany their movements. Dislocations moving under the action of the field are stopped near barriers and the concentration of impurity atoms is increased.

3/3

1/2 026 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--MAGNETIC AND STRUCTURAL CHARACTERISTICS OF COLD ROLLED TRANSFORMER
STEEL WITH RIBBED STRUCTURE AND LOW SPECIFIC LOSSES -U-
AUTHOR--(04)--DRUZHININ, V.V., PRASOVA, T.I., CHISTYAKOV, V.K., KURENNYKH,

~~L.K.~~
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 226-32

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--TRANSFORMER STEEL, COLD ROLLING, METAL TEXTURE, GRAIN SIZE,
CRYSTAL STRUCTURE, MAGNETIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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CIRC ACCESSION NO--AP0115905

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115905

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO PRODUCE A COLD ROLLED TRANSFORMER STEEL WITH A RIBBED TEXTURE AND SP. LOSSES ρ_{15-50} EQUALS 0.9-1.0 W-KG THE FOLLOWING CONDITIONS MUST BE FULFILLED. THE PRESENCE OF STRONGLY PRONOUNCED CRYSTALLOGRAPHIC TEXTURE; THE DEGREE OF PERFECTION OF THE MAGNETIC TEXTURE SHOULD BE SUCH THAT GAMMA EQUALS (1-3) TIMES 10 PRIME NEGATIVE 6; THE AV. GRAIN SIZE SHOULD BE MAINTAINED AT 1-4 MM; THE SUM TOTAL OF C, S, N, AND AL IMPURITIES IN THE STEEL SHOULD BE SMALLER THAN 0.01PERCENT. FACILITY: VERKH-ISETSKII MET. ZAVOD, USSR.

UNCLASSIFIED

USSR

UDC 536.2

MUSTAFAYEV, R. A., KURETIN, V. V.

"Dynamic Method of Measurement of Heat Capacity of Liquids at High Pressures and Temperatures"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 1, Jan-Feb 75, pp 144-149.

Abstract: A method is presented for measurement of the true heat capacity of liquids at high temperatures and pressures in the mode of smooth heating. The method of experimental determination of the "constants" of the device is described. The method is used at temperatures of up to 400° C, pressures up to 500 atm. The calorimetric device which realizes the dynamic method described in this work, called a dynamic C-calorimeter, consists of a massive metal tube, containing a metal ampule, filled with the fluid being studied. The calorimetric device is heated smoothly by means of a heater distributed evenly over the outer surface of the tube. The calculation formula for the true heat conductivity is produced from the equation for the thermal balance of the calorimetric device. The method can utilize two different plans for temperature measurement. In the first, the temperature drop is measured directly by a differential thermocouple, and the heating rate is calculated as the ratio of small increments. In the other, the delay time between the

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USSR

Mustafayev, R. A., Kuretin, V. V., Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 1, Jan-Feb 73, pp 144-149.

indications of two thermocouples in metal parts adjacent to the air gap is measured as a function of temperature.

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USSR

MELIKHCV, A. N., KARELIN, V. P. and KUREYCHIK, V. M.

"Cutting of a Graph into Subgraphs"

Mat. Modelir. i Teoriya Elektr. Tsepey [Mathematical Modeling in the Theory of Electric Circuits -- Collection of Works], No 10, Kiev, Nauk. Dumka Press, 1973, pp 70-75 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No (V417)

Translation: Problems of the cutting of arbitrary finite graphs into maximally connected subgraphs are studied. A formal method is suggested for solution of this problem. The method is based on the determination of permutations maximizing the number of units in the diagonal sections of a contiguity matrix of the initial graph. The algorithm suggested is used to write and debug a program for optimal sectioning of graphs on the Minsk-22 computer.

Author's view

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USSR

KUREYCHIK, V. M. and LISYAK, V. V.

"Placement of Modules in Cells During Machine Planning of Digital Devices"

Tr. Taganrog. Radiotekhn. In-ta [Works of Taganrog Electronic Engineering Institute], 1973, No 37, pp 172-184 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V624).

Translation: An algorithm is suggested for the placement of modules in cells, consisting of three stages: successive placement, iterational placement and a stage of additional adjustment of connections constructed. The initial information for the operation of the algorithm is a matrix. The algorithm is fast-acting and easy to program for a digital computer. Data from a program written for the Minsk-22 computer are presented.

Authors' view

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USSR

MELIKHOV, A. N., KUREYCHIK, V. M., LISYAK, V. V.

"Algorithm of Placement of a Graph on a Plane"

Teor. Kibernetika [Theoretical Cybernetics -- Collection of Works], Kiev, 1971, pp 48-65 (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V784 by O. Belkin).

Translation: One problem of topological planning of digital automata is studied -- the problem of placement of modules in cells considering the minimum total length of connecting wires. Known algorithms of placement of modules can be divided into two types: sequential and iterative. The former, in addition to simplicity of realization and high speed, have low accuracy. Iterational algorithms, although they are slower, yield more precise results, the final result depending on the initial placement of the modules. An algorithm suggested for production of the initial placement of modules utilizes sequential methods, and minimization of the total length of connections is achieved by iterative methods. The algorithm studied was used in a small system for planning the topology of digital integrated circuits and structures. The corresponding program, written in LYAPAS, allows graphs containing up to 200 points to be studied. The total time of solution of the problem of placement of 100 modules is approximately 1 hour (on the Minsk 22 computer).

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USSR

UDC 8.74

MELIKHOV, A. N., KUREYCHIK, V. M., LISYAK, V. V.

"An Algorithm for Laying out a Graph on a Plane"

Kiev, Teor. kibernetika--sbornik (Theoretical Cybernetics--collection of works), 1971, pp 48-65 (from RZh-Matematika, No 1, Jan 73, abstract No 1V764 by O. Belkin)

Translation: The paper deals with one of the problems of topological projection of digital automata -- the problem of arranging modules in cells with regard to the minimum overall length of connecting wires. Conventional algorithms for arrangement of modules can be broken down into two types: sequential and iteration. Algorithms of the first type are simple to realize and fast, but are not highly precise. Iteration algorithms, although slower, give more accurate results, the final result depending on the initial arrangement of the modules. The proposed algorithm for initial arrangement of the modules utilizes sequential methods, and the overall length of the connections is minimized by iteration methods. This algorithm was used in a small system for design of the topology of digital integrated circuits and structures. The corresponding program in LYAPAS language can handle graphs containing up

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USSR

MELIKHOV, A. N. et al., Teor. kibernetika, 1971, pp 48-65
to 200 vertices. The overall time for solution of the problem of arranging
100 modules is approximately one hour (on the "Minsk-22" digital computer).

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USSR

UDC 632.95

PRIKAZCHIKOVA, L. P., RYBCHENKO, L. I., KURILENKO, K. K., CHERKASOV, V. M.,
CHEREPEENKO, T. I.

"Insecticidal and Fungicidal Activity of Certain Derivatives of Pyrimidine-Carboxylic Acids, Methyl and Styryl Pyrimidines"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiologically Active Substances. Republic Interdepartmental Collection), 1972, No 4, pp 89-91 (from RZh-Khimiya, No 2 (II), Feb 73, Abstract No 2N473)

Translation: Results are presented from tests under laboratory conditions of derivatives of pyrimidine carboxylic acids, methyl and styryl pyrimidines. The majority of the tested compounds are weak insectofungicides. The 2,6-dichloro-4-methylpyrimidine 100% suppresses *Alternaria radicina*, *Aspergillus niger*, *Fusarium oxysporium*, *Venturia inaequalis* and *Helminthosporium*. On replacement of the Cl atoms by OH, the fungicidal activity drops significantly; 2-styrylpyrimidine inhibits the growth of fungus mycelium in a concentration of 0.1 and 0.05% by 100%; 4-methyluranyl in a concentration of 1% causes 67% death of houseflies, and 5-bromo-2-methylpyrimidine, 100%.

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USSR

UDC 632.95

KURILENKO, L. K., CHERKASOV, V. M., PRIKAZCHIKOVA, L. P., RYBCHENKO, L. I.,
CHEREPENKO, T. I.

"Insecticidal and Fungicidal Activity of 4-N-substituted 5-nitro-6-aminopyrimidine and 6,8,9-substituted Adenine"

Fiziol. aktivn. veshchestva. Resp. mezhved. sb. (Physiologically Active Substances. Republic Interdepartmental Collection), 1972, No 4, pp 91-93 (from RZh-Khimiya, No 2 (II), Feb 73, Abstract No 2N472)

Translation: The test results indicate that the derivatives of purine (I) and pyrimidine (II) exhibit significant insecticidal activity; 4-NH₂-5-NO₂-6-PhNH-II and 8-cyclohexyl-substituted and 8-chlorophenyl-substituted I, and the 8-methylkinetine isomer cause a 90-100% death rate of houseflies.

USSR

UDC 615.21:547.831.3

MOSKOVKINA, T. V., TILICHENKO, M. N., KURILENKO, V. M., and FEDYAYEVA-RASOVA,
L. P., Far Eastern University, Vladivostok, and the Novokuznetsk Scientific
Research Chemicopharmaceutical Institute

"In Search of Medicinal Agents in the Hydroquinoline Series"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, No 3, 1973, pp 3-6

Abstract: For purposes of obtaining new neutropic agents, a number of tetra- and decahydroquinolines were synthesized by reacting 1,5-diketones (prepared by adding cyclohexanone or α , α -dimethyltetrahydro- γ -pyrone to chalcone) with formamide in formic acid (Leuckart reaction). The resultant hydroquinolines were colorless, crystalline substances that formed water-soluble salts with mineral acids. Only one preparation, 1-amino-2,4-diphenyldecahydroquinoline, showed antidepressive properties by preventing reserpine-induced blepharoptosis and hypothermia, and chlorpromazine catalepsy.

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UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--MECHANISM OF THE SIMULTANEOUS REACTION OF BUTYL ISOCYANATE AND
METHANOL WITH AEROSIL -U-

AUTHOR--(05)--KULIK, N.V., NEGIYEVICH, L.A., KURGAN, M.P., BELITSKAYA, G.F.,
KACHAN, A.A.

COUNTRY OF INFO--USSR

SOURCE--TECH. EKSP. KHIM. 1970, 6(1), 55-60

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC ISOCYANATE, METHANOL, CHEMICAL REACTION RATE,
ADSORPTION, SILICA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1171

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CIRC ACCESSION NO--AP0128593

UNCLASSIFIED

2/2 020

CIRC ACCESSION NO--4P0128593

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. REACTION RATES WERE MEASURED OF
URETHANE (I) FORMATION FROM BUNCO (II) AND MEOH IN THE GAS PHASE ON
AEROSIL. THE HIGHEST RATE WAS ACHIEVED BY INTRODUCING A MIXT. OF MEOH
AND II ONTO THE CATALYST, DUE TO COMPLEX FORMATION. A LOWER RATE WAS
OBTAINED ON INTRODUCING II FIRST. INTRODUCTION OF MEOH FIRST LED TO THE
LOWEST RATE DUE TO BLOCKING OF SILANOL GROUPS OF THE CATALYST BY MEOH
ADSORPTION.
FACILITY: INST. KHIM. VYSOKOMOL. SOEDIN., KIEV,
USSR.

UNCLASSIFIED

USSR

UDC 615.787

KLUSHA, V. Ye., KIMENIS, A. A., and KURGANE, V. V. Order of Labor Red Banner
Institute of Organic Synthesis, Academy of Sciences Latvian SSR

"Effect of Thiocoline Esters of Furan- and 5-Nitrofurancarboxylic Acids on
Cholinergic Processes"

Riga, Izvestiya Akademii Nauk Latvyskoy SSR, No 7(276), 1970, pp 103-110

Abstract: It was found that furan- and 5-nitrofurancarboxylic acids affect cholinergic processes. The principal indication of this action is a two-phase nicotine-like effect which includes an excitation effect on the chemoreceptors of the carotid bodies when the compounds are administered intravenously. In experiments with adrenal gland preparations in situ, the compounds increased the epinephrine supply to the blood. The second-phase nicotine-like effect involves ganglioblocking and a curarizing action. A slightly active M-cholinomimetic component was found in both compounds. Introduction of a nitro group produced no significant differences in the pharmacological activity of the compounds.

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USSR

UDC 541.49.547.466.2

DAYANKOV, V. A., ROGOZHIN, S. V., and KURGANOV, A. A., Institute of Metalorganic Compounds, Academy of Sciences USSR

"Existence of Two Forms in Solutions of Copper (II) Bis-Complexes with Bidentate α -Amino Acids"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 2, Feb 72, p 486

Abstract: Normally absorption spectra of aqueous solutions of Cu(II) bis-complexes with bidentate α -aminoacids show a single maximum at λ_{max} 600 m μ . Copper complexes with racemic N,N-dimethylisovaline show two maxima at 529 and 602 m μ , the ratio of these peaks changing from 0.809 to 1.168 when the temperature is changed from 25 to 85°. The bis-complex of Cu(II) with N-benzyl-L-proline also shows an increase of the peak at 510 m μ and a decrease at 580 m μ with temperature elevation. The intensity of the short wavelength band increase in the following order of some of the solvents studied: CH₃OH < H₂O $\approx$ C₂H₅OH < CH₃COOH $\approx$ dioxane < CHCl₃ < C₆H₆ $\approx$ CS₂. Analogous, although less marked behavior is also observed in Cu (II) bis-complexes with L- and DL-dimethylisoleucine, benzylisoleucine, dimethylvaline, methylproline, benzylvaline, etc. 1/1

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1/2 006
UNCLASSIFIED
TITLE--STUDIES OF RABBIT MUSCLE PHOSPHORYLASE B ASSOCIATION BY KINETIC
METHOD -U-
AUTHOR-(02)-SILONOVA, G.V., KURGANOV, B.I.
PROCESSING DATE--16OCT70
COUNTRY OF INFO--USSR
SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 3, PP 445-457
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RABBIT, PHOSPHORYLASE, ENZYME ACTIVITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0188
STEP NO--UR/0463/70/004/003/0445/0457
CIRC ACCESSION NO--AP0120886
UNCLASSIFIED

2/2 006

UNCLASSIFIED

PROCESSING DATE--1690170

CIRC ACCESSION NO--AP0120886

ABSTRACT/EXTRACT--(U) GP-D- ABSTRACT. QUANTITATIVE ANALYSIS WERE CARRIED OUT OF PHOSPHORYLASE B SPECIFIC ACTIVITY DEPENDENCE ON ENZYME, CONCENTRATION WHICH REFLECTS THE REVERSIBLE TRANSITION OF DIMERIC FORM OF PHOSPHORYLASE B INTO TETRAMERIC FORM IN THE PRESENCE OF AMP PLUS MG PRIME2 POSITIVE PLUS CYSTEINE. THE CONCLUSION HAS BEEN MADE THAT TETRAMERIC FORM IS INACTIVE. ASSOCIATION CONSTANTS FOR EQUILIBRIUM BETWEEN PHOSPHORYLASE B OLIGOMERIC FORMS SATURATED BY AMP VARIED MARKEDLY FROM ONE ENZYME PREPARATION TO THE OTHER AND WERE EQUAL TO 10 PRIMES MINUS 10 PRIME6 M NEGATIVE PRIME1 (10-250DEGREES, PH 6,8). ENTHALPY OF ASSOCIATION WAS ESTIMATED AS MINUS 26 KCAL-MOLE. DEPENDENCE OF PHOSPHORYLASE B ACTIVITY OF AMP CONCENTRATION IN PREINCUBATION MIXTURE IS SIGMOIDAL DUE TO COOPERATIVE INTERACTIONS OF AMP BINDING SITES. ALLOSTERIC INTERACTIONS ARE ANALYZED FOR A MODEL SYSTEM ACTIVE DIMER IN EQUILIBRIUM INACTIVE TETRAMERMMEDIATED BY THE DISPLACEMENT OF EQUILIBRIUM BETWEEN OLIGOMERIC ENZYME FORMS UNDER THE INFLUENCE OF SUBSTRATE. DIFFERENT TYPES OF ALLOSTERIC INTERACTIONS OF AMP BINDING SITES IN PHOSPHORYLASE B ARE DISCUSSED. FACILITY: INSTITUTE OF BIOCHEMISTRY, ACADEMY OF SCIENCES. FACILITY: INSTITUTE FOR VITAMINS RESEARCH, USSR, MOSCOW.

UNCLASSIFIED

UDC: 687.319.42

USSR

VERESHCHAGIN, V. G., KARASIK, V. R., KURGANOV, G. B.

"Method of Measurements of Longitudinal Critical Currents in Superconductive Alloys"

Moscow, Sverkhprovodnyshchiye splavy i soedineniya (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp. 278-277 (1973) RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D551 [reference]

Translation: In studying the dependence of critical currents on longitudinal magnetic field strength, procedural difficulties arise due to three circumstances: the necessity of locating the contacts in a strong magnetic field; the high current density (about 10^6 A/cm²); the shielding effect of the transverse component of the magnetic field. These difficulties were overcome by means of a specially designed holder and by using ultrasonic tinning. Contacts are produced with a resistance of 10^{-3} Ohm in a magnetic field of $\sim 50,000$ Oe/cm. The proposed method is used for measurements of longitudinal currents in superconductive specimens. One illustration, bibliography of five titles.

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Monograph

ACC NR AM8003404

Ambartsumyan, R. S. (Corresponding Member, Academy of Sciences USSR; Honored Scientist and Technologist of RSFSR); Babich, B. N. (Candidate of Technical Sciences); Ishkovets, D. S. (Doctor of Technical Sciences); Bokshteyn, S. Z. (Doctor of Technical Sciences); Bronfin, M. B. (Candidate of Technical Sciences); Budzinskiy, O. Z. (Candidate of Technical Sciences); Gorbadey, A. T. (Engineer); Glazunov, S. G. (Doctor of Technical Sciences); Zakharova, G. V. (Candidate of Technical Sciences); Gribkov, V. N. (Candidate of Technical Sciences); Ivanov, V. K. (Candidate of Technical Sciences); Kishkin, S. T. (Academician, Academy of Sciences USSR; Honored Scientist and Technologist RSFSR); Kozlov, A. T. (Candidate of Technical Sciences); Korneyev, M. I. (Doctor of Technical Sciences; Honored Scientist and Technologist RSFSR); Kurganov, G. V. (Candidate of Technical Sciences); Panasyuk, I. O. (Candidate of Technical Sciences); Pevzner, S. B. (Candidate of Technical Sciences); Pod'yachev, V. N. (Engineer); Portnoy, K. I. (Doctor of Technical Sciences); Razuvaev, YE. I. (Engineer); Svetlov, I. L. (Candidate of Physical and Mathematical Sciences); Sivakov, YE. V. (Engineer); Skugarev, I. G. (Doctor of Technical Sciences); Strizhevskaya, L. G. (Candidate of Technical Sciences); Stroyev, A. S. (Candidate of Technical Sciences); Sutina, YU. A. (Engineer); Tumanov, A. T. (Doctor of Technical Sciences; Honored Scientist and Technologist RSFSR); Timofeyeva, M. I. (Candidate of Technical Sciences); Prolova, K. I. (Candidate of Technical Sciences); Chubarov, V. M. (Candidate of Technical Sciences)

UDC: 621.669.018.45

Card 1/3

ACC NR: AM8008404

Refractory materials in the machinery industry; a handbook (Tugoplavkiye materialy v mashinostroyenii; spravochnik) Moscow, Izd-vo "Mashinostroyeniye", 67. 0592 p. illus., biblio., index. 1,200 copies printed.

TOPIC TAGS: refractory metal, high temperature alloy, alloy welding, heat resistant property, heat resistant material, heat resistant nonferrous metal, alloy heat effect, metal oxide

PURPOSE AND COVERAGE: This reference book is intended for designers and technologists of machine works and instrument making plants and scientific-research institutes. The book contains information and data on the physical, mechanical and technological properties of titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum, tungsten and rhenium and also their compounds and alloys. Methods of manufacturing of various products are presented.

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SUB CODE: 11/ SUBM DATE: 07Apr67/ ORIG REF: 382/ OTH REF: 558

Cord 3/3

UDC 632.95

USSR

YUKHTIN, N. N., ANDREYEVA, YE. I., MEL'NIKOV, N. N., SYALCHUEVA, A. V.,
PRONCHENKO, T. S., SHKURATOVA, G. N., YURKOVA, A. G., KUNGAROV, L. B.,
NOVIKOVA, R. G., and OBUKHOVA, V. I.

"Phenylmercury and Hexylmercury"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow 1970, pp 145-150 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11N426)

Translation: Seed disinfectant dusts -- hexylmercury (1% EtHgCl, 18-22% hexachlorobenzene, and up to 20% γ -hexachlorocyclohexane) and phenylmercury (1% EtHgCl and 18-22% hexachlorobenzene) -- are officially authorized in the Soviet Union for use against the same plant diseases as those controlled by granosan. About half the EtHgCl expended when granosan is used is expended when phenylmercury and hexylmercury are used. Phenylmercury can be used against fusarium wilt and helminthosporiosis. The new disinfectants show promise as agents for controlling dwarf wheat infections and wheat kernel smut. The most promising signal dyes for the disinfected grain are Rhodamine C, methylene blue, acid blue-black and direct red 2C.

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UDC 621.371:538.569.4

USSR

KURGANOV, R. A. and LUKIN, I. V.

"Anomalous Absorption in Meteor Radio Ranges"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tезисы докл. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 502-506 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A349)

Translation: A method is given for prognosis of anomalous meteor radio propagation of several types based on the use of mathematical criteria of detection and a developed method for measuring the degree of anomalous absorption. One illustration, bibliography of seven. A. L.

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USSR

UDC 621.396.24:925.55

KURGANOV, R.A., IURIN, I.V.

"Experimental Investigation Of Meteoric Propagation Of Radio Waves In Polar Latitudes"

V sb. Meteorn. rasprostr. radiovoln (Meteoric Propagation Of Radio Waves--Collection Of Works), Issue 8, Kazan', Kazan University, 1971, pp 5-17 (from REh---Radiotekhnika, No 9, Sept 1971, Abstract No 9A194)

Translation: Data are analyzed from measurements of the parameters of meteoric propagation which, starting in 1967, have been regularly conducted at an experimental transpolar route [zapolyarnyy tras], with coverage of the maximum and minimum magnetic-ionosphere disturbance. The route is oriented with a parallel. Some data on the apparatus are presented. Curves are constructed for the propagation of meteoric reflections by types, the average duration of the meteoric reflections, the daily variation of the number of meteoric reflections, and the fill factor. 6 ill. 5 ref. N.S.

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USSR

UDC 621.396.24:543.55

KURGANCY, R.A., LEKIN, I.V.

"Anomaly Of Meteoric Propagation Of Radio Waves In Polar Latitudes"

V sb. Meteor. rasprostr. radiovoln (Meteoric Propagation Of Radio Waves--Collection Of Works), Issue 8, Kazan', Kazan University, 1971, pp 55-58 (from RZh-Radiotekhnika, No 9, Sept 1971, Abstract No SA191)

Translation: With the object of constructing a theory for forecasting meteoric propagation of radio waves (MFRW) in polar latitudes, measurements were made of the parameters of MFRW during periods of maximum and minimum magnetic-ionospheric disturbances at an experimental route [transva]. The temporal variation of the ionosphere parameters is compared with the temporal change of the number of recorded meteorites, which makes it possible to recognize anomalies connected with absorption in the zone of auroras. The necessity is established for a forecast of anomalies of the functional relation between change of the characteristics of the ionosphere and magnetosphere and the changes of the intensity of the Poisson meteor shower registered at an anomalous and preanomalous hour. 2 ill. 4 ref. R.S.

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USSR

UDC: 621.396.2:523.583

KURGANOV, R. A., KAZAKOVA, T. V.

"On the Necessity of Accounting for the Distribution of Velocities and Density of the Incident Flux of Meteoric Particles in Predicting Meteoric Propagation of Radio Waves"

V sb. Meteorn. rasprostr. radiovoln (Meteoric Propagation of Radio Waves--collection of works), Vyp. 7, Kazan', Kazan' University, 1970, pp 86-97 (from RSN-Radiotekhnika, No 12, Dec 70, Abstract No 12A371)

Translation: The diurnal and seasonal variation of fundamental parameters of meteoric propagation of radio waves are calculated for several experimental meteoric transmission paths. A preliminary evaluation has shown the necessity of accounting for the distribution of geocentric velocities of meteoric particles and limitation of reflection time. On the basis of an experiment, an evaluation is made of the extent of the effect of nonhomogeneities in the density distribution of meteoric particles striking the earth. A comparison of the results of calculations with experimental data shows the possibility of predicting the diurnal variation of the parameters of propagation. Four illustrations, bibliography of five titles. N. S.

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USSR

UDC: 621.396.2:523.532

KURGANOV, R. A.

"Experimental and Theoretical Investigation of the Directivity of Meteoric Propagation of Radio Waves"

V sb. Meteor. rasprostr. radiovoln (Meteoric Propagation of Radio Waves--collection of works), Vyp. 7, Kazan', Kazan' University, 1970, pp 65-87 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A272)

Translation: The author presents a method used for long-term investigation of the directional effect of meteoric radio wave propagation. The results of the research are given in the form of normalized histograms of the probability distribution and duty cycle of meteoric radio reflections with respect to azimuth and angle of elevation. The results of theoretical research are presented. Based on analysis of the materials from experimental and theoretical studies, the author concludes that a natural parameter of directivity which has a clearly expressed diurnal variation is the optimum azimuth. The graphs necessary for predicting the directivity of propagation by meteors are plotted. Bibliography of 15 titles, 9 tables. N. S.

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UDC 536.24

USSR

PETUKHOV, B. S., KURGANOV, V. A., GLADUNISOV, A. I., Institute of High Temperatures of the Academy of Sciences USSR

"Experimental Study of Heat Transfer to a Turbulent Flow of Multiatomic Gas Under High-Temperature Heads"

Moscow, Teplofizika Vysokikh Temperatur, No 6, Nov/Dec 70, pp 1311-1315

Abstract: New experimental data are presented on local heat transfer in the heating of a turbulent flow of nitrogen and ammonia for which, as for other multiatomic gases, it is characteristic to have a more considerable change in viscosity, specific heat, and especially heat conductivity with temperature than in the case of simple gases. The measurements were conducted in two stainless steel tubes with internal diameters of 3 and 4 mm. The length of the heating zone was 90-95 calibers. The tubes were heated by passing a dc current directly through the wall. Local heat releases were determined on the basis of the current and voltage drops at sections between potentiometric leads. Experiments on ammonia were conducted for Reynolds numbers of 10^4 - $2.4 \cdot 10^5$ at the output, an initial gas temperature of 20-150°C, and a wall temperature up to 900°C. The density of the heat flux varied from $1.1 \cdot 10^4$ to

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USSR

PETUKHOV, S. B., et al., Teplofizika Vysokikh Temperatur, No 6, Nov/Dec 70, pp 1311-1315

$1.5 \cdot 10^6 \text{ w/m}^2$. Control experiments on N_2 were conducted at a gas temperature at the output of $\sim 20^\circ\text{C}$; the Reynolds number varied from $3 \cdot 10^4$ to 10^5 and the heat flow density varied from $17.5 \cdot 10^3$ to $5 \cdot 10^5 \text{ w/m}^2$. The data show that in the case of the heating of ammonia, the functional dependence of Nu on Re and Pr retains approximately the same form as in isothermal flow. A considerable increase in the heat conductivity of ammonia, especially in the region near the wall (the more heated region), to a considerable degree compensates for the weakening of convective exchange associated with the decrease in gas density under heating, and this causes a considerably weaker dependence of the Nusselt number on the temperature factor.

2/2

KURGANOV V.A.

Acc. Nr.: ANO104123

Ref. Code: 189003

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE PRIZES, U.S.S.R.

NEWSPAPER-- IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

ABSTRACT-- NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. ALPEROVICH, V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUZNETS, L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, I. M. VEDEMENEV, S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOJET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. K. MISHENKO, L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE MINISTRY OF THE AVIATION INDUSTRY.

1/2

Reel/Frame
19870555

Acc. Nr.: AN0104123

"A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES", /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUSKO AND "ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATEMILLS", BY A. I. KIRYANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALIBERIDZE, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPUTATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

"THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE", BY M. V. GERASIMOV, O. M. CHEKHOMOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLATOUST METALLURGICAL PLANT.

2/2

Reel/Frama
19870556

KZ

USSR

UDC 8.74

ZLOBIN, V. K., ZLOBINA, N. V., KURGANOV, V. D.

"Computer Modeling of the Automatic Scanning of Three-Dimensional Objects for Recognition Purposes"

V sb. Avtomat. upr. i vyvchisl. tekhn. (Automatic Control and Computer Technology -- Collection of Works), No. 10, Moscow, "Mashinostroyeniye", 1972, pp 221-228 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V675)

Translation: A technique is described for the computer modeling of the automatic scanning of three-dimensional objects for recognition purposes. A block diagram is given for a subprogram for showing some object for recognition with a given a priori probability, obtaining the angles of view of this object under the condition that the probabilities of their values are distributed according to a preassigned law, determining the values of the properties of the projection of the object corresponding to these angles, etc. The necessity of solving this problem always arises in the absence of actual equipment for the input of information to the computer. Authors abstract.

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USSR

UDC 8.74

GRIGOR'YEV, V. L., ZLOBIN, V. I., KURGANOV, V. D.,

"Filtration of Images in Pattern Recognition"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Technology -- Collection of Works), No. 10, Moscow, "Mashinostroyeniye", 1972, pp 116-140 (from RZh-Matematika, No 9, Sep 72, Abstract No 9V671)

Translation: Possible forms of noise in the input of iso-object information into a computer are analyzed. A critical review of several known methods of filtration is given. Single anisotropic filtration of discrete images is investigated. A new form of a recurrent filter having many advantages over known anisotropic filters was developed, and investigated. A procedure for measuring the intensity of noise and the automatic change depending on the value obtained for the filter aperture is proposed and investigated. A high-speed device was developed for measuring the intensity of noise in images of three-dimensional objects. A systematic study of the double filtration of images was conducted. The structures of filters of the first and second stages were determined. Recommendations are made concerning the parameters of a single smoothing device. 15 ref. Authors abstract.

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UDC 8.74

USSR

ZLOBIN, V. K., ZLOBINA, N. V., KURGANOV, V. D.

"Digital Computer Simulation of the Process of Automatic Scanning of Three-Dimensional Objects During Recognition of Them"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Engineering — collection of works), Vyp. 10, Moscow, Mashinostroyeniya Press, 1972, pp 221-228 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V675)

Translation: A procedure is described for digital computer simulation of the process of automatic scanning of three-dimensional objects during recognition of them. A block diagram is presented for a subprogram which permits presentation of the object for recognition with a given a priori probability, obtaining of the scanning angles of the object under the condition that the probabilities of their values are distributed by a law given in advance, determination of the values of the properties of the projection of the object corresponding to these angles, and so on.

The necessity for solving the investigated problem always arises in the absence of real equipment for data input to a computer.

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- 86 -

UDC 8.74

USSR

GRIGOR'YEV, V. L., ZLOBIN, V. K., ~~KURGANOV, V. D.~~

"Filtration of Images in Pattern Recognition"

V sb. Avtomat. upr. i vychisl. tekhn. (Automatic Control and Computer Engineering — collection of works), Vyp. 10, Moscow, Mashinostroyeniye Press, 1972, pp 116-140 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V671)

Translation: Possible forms of noise during input of iso-objective information to a digital computer are analyzed.

A critical analysis of some of the known filtration procedures is presented. A study was made of single anisotropic filtration of digitalized patterns.

A new type of recurrent filter has been developed which has a number of advantages by comparison with the known anisotropic ones, and it is investigated.

A procedure is proposed and investigated for measuring the intensity of noise and automatic variation as a function of the magnitude of the filter aperture obtained.

A high-speed device was developed for measuring the noise intensity in the patterns of three-dimensional objects. A systematic study of double filtration of the patterns is presented. The structures of the filters of the first and second stages are defined.

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2 USSR

GRIGOR'YEV, V. L., et al., Avtomat. upr. i vychisl. tekhn., Vyp. 10, Moscow, Mashinostroyeniye Press, 1972, pp 116-140

Recommendations are made with respect to selecting the parameters of a single smoothing device. The bibliography has 15 entries.

2/2

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USSR

UDC 632.95

MEL'NIKOV, N. N., ANDREYEVA, YE. I., PRONCHENKO, T. S., SMALCHENKO, A. V.,
SHKURATOVA, G. N., KURGANOVA, L. B., YURKOVA, A. G., OZURKOVA, V. I., and
NOVIKOVA, R. G.

"Concerning Liquid Organomercury Seed Disinfectants"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection --
collection of works), vyp 1, Moscow, 1970, pp 150-155 (From Khim.-Mikrobiol., No 11,
Jun 72, Abstract No 111827)

Translation: From the results of hothouse and small-plot field tests of
non-Soviet and experimental Soviet samples of liquid organomercury fungicides,
as well as with consideration to non-Soviet research and practical use in such
fungicides, the authors conclude that liquid preparations deserve attention
as promising forms for use as seed disinfectants in Soviet agriculture.

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USSR

UIC: None

MALINOVSKIY, B. N., PALAGIN, A. V., and KURGAYEV, A. P.

"Digital-Analog Computer Controlling Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 26, 1973, p 169, 386409

Translation: A device containing a passive memory unit connected with a counter-register of arguments, a coincidence circuit, an operational memory unit, and an adder whose output is connected to the inputs of the operational memory unit and the counter-register and whose inputs are connected through an analog-digital converter to an input signal switch and to the outputs of the passive and operational memories is distinguished in that, for the purpose of reducing the required passive memory volume, it contains a counter-register for increments of the arguments, whose inputs are connected with the outputs of the adder and the operational memory unit while the outputs are connected through the coincidence circuit to the controlling input of the analog-digital converter; the output of the adder is connected through the digital-analog converter to one of the inputs of the input signal switch and also through a nonlinear approximation input element in each quantizing section with a capacitor, for example, whose second plate is grounded.

1/1

USSR

UDC: 621.382.3

IGNATYENKO, P. M., ~~POPOV, N. Ya.~~, KRABEY, E. A., MURCH, A. P.,
NEDEL'SKIY, N. P., PAVICH, V. N., TSARENKOV, B. V., ~~MAKAROV, A. I.~~
Institute, Physicotechnical Institute named A. F. Ioffe, Academy of
Sciences of the USSR, Leningrad

"The Gallium Phosphide Electroluminescent Dynistor"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol. 5, No. 9, Dec. 61, pp
1695-1699

Abstract: This paper describes sources of red and green light with a
S-shaped current-voltage curve based on epitaxial gallium phosphide
PNPH structures -- electroluminescent dynistors. The electrical and
electroluminescent characteristics and parameters of these devices are
presented, and it is shown that the properties of electroluminescent
gallium phosphide dynistors are similar to those of dynistors based on
other materials.

1/1

USSR

UDC 541.182.2:541.183.022:541.183.26

DERYAGIN, B. V., and KURGIN, YU. S., Institute of Physical Chemistry, USSR Academy of Sciences, Moscow

"A Theory of Passivation of Condensation Growth in Mist Droplets by Use of Cetyl Alcohol Vapors"

Moscow, Kolloidnyy Zhurnal, Vol XXXIV, No 1, Jan-Feb 72, pp 36-42

Abstract: Considerable funds are being invested in study of control of phase transitions in warm clouds and fogs, and this is associated with various technical difficulties. Control of drop growth through formation of monolayers on them of surface-active substances is one promising avenue of approach.

The authors study theoretically several factors involved in droplet growth, and derive curves expressing them: 1) specific resistance to evaporation as related to surface pressure for a monolayer of cetyl alcohol at 25°; 2) surface pressure of the alcohol monolayer as related to surface necessary per molecule at 20°; and 3) approximate relation between condensation coefficient of water covered by the molecule and degree of filling of the monolayer -- both for pure water and for cetyl alcohol. Appropriate equations are given which should assist further research in this field.

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1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--FURAN OR ITS ALKYL OR CHLORO DERIVATIVES -U--

AUTHOR--(03)-KURGINYAN, K.A., KARAPETYAN, N.G., KARAPETYAN, R.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,119

REFERENCE--OTKRYTIYA., IZOBRET, PROM, OBRATZSY, TOVARNYE ZNAKI, 1970 47

DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FURAN, ALKYL RADICAL, CHLORINATED ORGANIC COMPOUND, CHEMICAL
PATENT, ORGANIC SYNTHESIS, CATALYST REGENERATION, OXIDATION, BUTADIENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--30G7/0864

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136298

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136298

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FURAN OR ITS ALKYL OR CHLOROANALOGS IS PREPD. BY OXIDIZING A DIOLEFIN (E.G. BUTADIENE) WITH A CATALYTIC MIXT. OF AN AQ. SOLN. OF CU PRIME2POSITIVE AND PD CHLORIDE WITH THE PH OF THE CATALYTIC SOLN. 0.1-0.5 AND AT 60-110DEGREES. TO ENSURE CONTINUITY OF THE PROCESS THROUGH REGENERATION OF CUCL SUB2 AND REDN. OF THE INITIAL ACIDITY OF THE CATALYTIC SOLN., THE REACTION TAKES PLACE IN THE PRESENCE OF AIR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--COMPLETE CONFIGURATION INTERACTION FOR BENZYL RADICAL -U-

AUTHOR-(03)-KURGLYAK, YU.A., MOZDOR, YE.V., KUPRIYEVICH, V.A.

COUNTRY OF INFO--USSR

SOURCE--UKRAINSKIY FIZICHESKIY ZHURNAL, 1970, VOL 15, NR 1, PP 48-58

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--ELECTRON STRUCTURE, FREE RADICAL, GROUND STATE, PROTON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1216

STEP NO--UR/0185/70/015/001/0048/0058

CIRC ACCESSION NO--AP0116681

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116681

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRONIC STRUCTURE OF BENZYL RADICAL IN ITS GROUND STATE WAS COMPUTED ON A MODEL HAMILTONIAN DUE TO PARISER-PARR WITH REGARD FOR A COMPLETE CONFIGURATION INTERACTION AS WELL AS WITH DIFFERENT LIMITED CONFIGURATIONAL SETS BUILT ON SCF OPEN SHELL ORBITALS. CORRELATION ENERGY CORRESPONDING TO THIS MODEL WAS FOUND TO BE EQUAL TO 0.929722 EV. WITH THE SINGLY EXCITED CONFIGURATIONS ONLY 18PERCENT OF THIS ENERGY ARE TAKEN INTO ACCOUNT. EXTENSION OF THE BASIS DUE TO DOUBLY EXCITED CONFIGURATIONS LEADS TO AN ACCOUNT OF 94PERCENT OF CORRELATION ENERGY. ANALYSIS OF ACCURACY OF THE PROTON HYPERFINE SPLITTING CALCULATION CAUSED BY UNACCURATE COMPUTATION OF THE WAVE FUNCTION IS GIVEN. IF ONLY SINGLY AND EVEN DOUBLY EXCITED CONFIGURATIONS ARE TAKEN INTO ACCOUNT, THEN ONE CANNOT HOPE TO OBTAIN SPLITTINGS WITH AN ACCURACY OF MORE THAN 0.5 G. INCLUSION OF TRIPLY EXCITED CONFIGURATIONS PERMITS THIS ERROR TO BE LOWERED BY ONE ORDER. IN ADDITION, THE USE OF THE SIMPLE MCCONNEL RELATION MAY LEAD TO AN ERROR IN SPLITTING CALCULATION OF NOT LESS THAN 1.5 G. FACILITY: INSTITUT FIZICHESKOY KHIMII AN USSR, KIEV.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--27/3/70
TITLE--EFFECTIVE RESISTANCE OF AN IMPERFECT SUPERCONDUCTOR OF THE SECOND
KIND IN AN OSCILLATING MAGNETIC FIELD -U-
AUTHOR-(05)-ANDRIANOV, V.V., ZENKEVICH, V.B., KURCHENOV, V.V., SYCHEV,
V.V., TERNOVSKIY, F.F.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1523-1531
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SUPERCONDUCTOR, OSCILLATION, MAGNETIC FIELD EFFECT, DIRECT
CURRENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/0006

STEP NO--UR/0056/T0/058/005/1523/1531

CIRC ACCESSION NO--AP0127656

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127656

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT IS INVESTIGATED OF AN EXTERNAL OSCILLATING MAGNETIC FIELD ON THE DIRECT CURRENT FLOWING IN AN IMPERFECT SUPERCONDUCTOR OF THE SECOND KIND. IT IS FOUND THAT WHEN THE VARIABLE COMPONENT OF THE EXTERNAL FIELD AMPLITUDE EXCEEDS A CERTAIN THRESHOLD VALUE AN EFFECTIVE DIRECT CURRENT RESISTANCE ARISES. THE DEPENDENCE OF THIS QUANTITY ON OSCILLATING FIELD FREQUENCY, AMPLITUDE OF VARIABLE COMPONENT, MAGNITUDE OF CONSTANT COMPONENT AND VALUE OF DIRECT CURRENT FLOWING IN THE SUPERCONDUCTOR IS DETERMINED. THE DEPENDENCE OF THE THRESHOLD AMPLITUDE OF THE EXTERNAL FIELD ON CURRENT AND FIELD STRENGTH IS INVESTIGATED. A THEORY IS PROPOSED WHICH EXPLAINS THE EXPERIMENTAL RESULTS. FACILITY: INSTITUT VYSOKIKH TEMPERATUR, AKADEMII NAUK SSSR.

UNCLASSIFIED

UDC 547.37:547.26'118

USSR

PUDOVIK, A. N., ZIMIN, M. G., and KURGUZOVA, A. M., Kazan' State University
imeni V. I. Ul'yanov-Lenin

"Addition of α -Hydroxyalkylphosphonate Esters to Unsaturated Compounds"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1964-1967

Abstract: The study of addition of α -hydroxyalkylphosphonates to unsaturated compounds indicates that α -hydroxyalkylphosphonates have a tendency to add to acrylonitriles, methacrylate and methyl vinyl ketone in the presence of a saturated solution of sodium ethoxide to form α -(dialkoxymethylphosphono)alkyl β -cyano(aceto, carbomethoxy)alkyl ethers. The addition products were identified from the tabular data obtained by elementary analysis, molecular refraction and IR and NMR spectra. A comparison of the yields of the addition products shows diethyl α -hydroxymethylphosphonate to be most reactive, diethyl α -hydroxyethylphosphonate somewhat less reactive and diethyl α -hydroxyisopropylphosphonate to be least reactive in the addition reactions. There appears to exist a specific regularity of an increasing tendency to addition reactions (primary > secondary > tertiary) for aliphatic alcohols.

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USSR

UFG 547.26'118

PUDOVIK, A. N., NIKITINA, V. I., and KURGUZOVA, A. M.

"Reactions of Organophosphorus Compounds Containing Active Methylene Groups With Methyl- β -chlorovinyl Ketone and α -Halogen Ethers"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 291-294

Abstract: The authors studied ketovinylation reactions of a series of organophosphorus compounds with an active methylene group (diethylphosphonoacetic ester, diethyl phosphonoacetone, diethyl esters of cyanoacetic and benzylphosphonic acids, as well as their monoalkyl derivatives). Ketovinylation of the sodium and potassium derivatives of phosphonoacetic ester and nitrilophosphonoacetic acid results in the formation of complex mixtures of products, of which mono- and di-ketovinylation products were obtained in low yields. Reactions with monoalkyl derivatives of the above compounds, as well as with monoalkyl derivatives of dimethyl and diethyl phosphonoacetone proceed more smoothly. Monoketovinylation products were obtained in satisfactory yields in a number of reactions. In addition to ketovinylation, all the studied reactions displayed self-condensation of methyl-

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USSR

PUDOVIK, A. N., et al., Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 291-294

β -chlorovinyl ketone to give triacetylbenzene.

The interaction of (β -acylvinyl)ammonium salts with monoalkylated dimethyl phosphonoacetone and diethyl ester of benzylphosphonic acid was studied. High yields of the ketovinylolation products were obtained in this case, and no formation of self-condensation product was observed. No ketovinylolation product could be obtained in the case of diethyl ester of benzylphosphonic acid.

Reactions of α -chloromethyl propyl and α -chlorodimethyl ethers with potassium derivatives of phosphonoacetic ester, phosphonoacetone and cyanophosphonomethane were studied. Monoalkylation products were obtained in most cases, as well as dialkylation products in a number of cases. According to IR spectral data the alkylation products of phosphonoacetone are derivatives of its enol form.

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1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--REACTIONS OF ORGANOPHOSPHORUS COMPOUNDS CONTAINING ACTIVE METHYLENE
GROUPS WITH METHYL BETA, CHLOROVINYL KETONE AND ALPHA, HALO ETHERS -U-
AUTHOR--(03)-PUDOYIK, A.N., NIKITINA, V.I., KURGUZOVA, A.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 291-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, METHYLENE, CHLORINATED ORGANIC
COMPOUND, KETONE, HALOGENATED ORGANIC COMPOUND, ETHER, TRIETHYLAMINE,
AMMONIUM SALT, CYANIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/1434

STEP NO--UR/0079/T0/004/002/0291/0294

CIRC ACCESSION NO--AP0116001

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT79

CIRC ACCESSION NO--AP0116881

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TREATING THE K OR NA DERIV. OF APPROPRIATE ACTIVE METHYLENE COMPS. WITH CLCH:CHAC OVER 1-1.5 HR WITH ICE COOLING GAVE, AFTER HEATING TO COMPLETE THE REACTION, THE FOLLOWING ACCH:CHCRR PRIME R DOUBLE PRIME (R, R PRIME AND R DOUBLE PRIME SHOWN): (FORMULA SHOWN ON MICROFICHE). TREATING THE P COMPD. CONTG. AN ACTIVE METHYLENE GROUP, WITH ET SUB3 N AND EQUIMOLAR AMT. CLCH:CHAC GAVE OVERNIGHT A SOLID MASS WHICH WAS HEATED 8-10 HR IN NEPH TO YIELD THE PRODUCTS OF KETO VINYLATION BY MEANS OF TRIALKYLACVL VINYLAMMONIUM SALTS. FOR ALKYLATION WITH HALOETHERS THE K DERIV. OF THE ACTIVE METHYLENE COMPD. WAS TREATED WITH HALOETHER AND HELD 1-2 HR AT ROOM TEMP. FOLLOWING WERE REPORTED: (FORMULA SHOWN ON MICROFICHE).

UNCLASSIFIED

SEE KURYA...
FOR KURIA...

1/2 012 UNCLASSIFIED PROCESSING DATE--ZONOV70
TITLE--MAGNETIC PROPERTIES OF COMPLEXES OF COPPER(II) WITH SCHIFF BASES
DERIVATIVES OF IMINOXYL RADICALS -U-
AUTHOR--(04)-MEGZHIDOV, A.A., MAMEDOVA, YU.G., LYUBOVSKIY, R.B.,
KURICHENKO, L.N.
COUNTRY OF INFO--USSR K
SOURCE--TEKH. EKSP. KHIM. 1970, 6(1), 133-7 (RUSS)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MAGNETIC PROPERTY, COPPER COMPLEX, SCHIFF BASE, IMINE, EPR
SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1169 STEP NO--UR/0379/70/006/001/0133/0137
CIRC ACCESSION NO--AP0128591
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128591

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE DPR SPECTRA AND THE MAGNETIC SUSCEPTIBILITY WERE DETD. FOR COMPLEXES OF CO WITH PARAMAGNETIC AND DIAMAGNETIC SCHIFF BASES. THE RESULTS ARE TABULATED. THE DATA FOR THE COMPLEXES WITH THE PARAMAGNETIC SCHIFF BASES SHOW THAT THE LARGER THAN N,G GROUP OF THE PARAMAGNETIC LIGAND CAN PARTICIPATE IN THE FORMATION OF THE COORDINATION BOND WITH THE CENTRAL METAL ION. IN THIS CASE, DIAMAGNETIC AS WELL AS PARAMAGNETIC COMPLEXES ARE FORMED. APPARENTLY, THE BOND WITH THE RADICAL GROUP IS FORMED THROUGH THE O ATOM.
FACILITY: INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

USSR

UDC: 519.1

TKEMALADZE, N. T., KURIDZE, M. V.

"On a Problem of Constructing a Plane Connected Graph"

Tbilisi, Nekotor. zadachi raspoznavaniya obrazov i teorii grafov--sbornik (Some Problems of Pattern Recognition and the Theory of Graphs--collection of works), "Metsnereba", 1972, pp 68-73 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V392 by I. Sigal)

Translation: The authors consider an arbitrary finite graph $G(V, E)$ where V is the set of vertices and E is the set of edges. The vertices of the graph $v_i \in V$ are points in a plane with coordinates (x_i, y_i) and the edges are segments of straight lines connecting the vertices of the graph. It is required to isolate the subset of vertices $V^* \subset V$ and to construct a plane connected graph $G^*(V^*, E^*)$ such that G^* has a unique finite bound, i. e. G^* is an elementary cycle; the resultant bound includes all vertices of the set $V \setminus V^*$ and its edge is a convex multiple-angle cycle. To solve this problem the authors use the well known algorithm of constructing a convex shell of a finite set of points $\{v_i\}$. This shell is a convex polygon of minimum perimeter, each vertex of which coincides with one

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USSR

TKEMALADZE, N. T., KURIDZE, M. V., Nekotor. zadachi raspoznavaniya obrazov i teorii grafov, "Metsnereba", 1972, pp 68-73

of the points from $\{u_i\}$, while all other points from $\{v_i\}$ fall inside the constructed polygon.

2/2

USSR

UDC: 519.1

KURIDZE, M. V., TKEMALADZE, N. T.

"On a Problem of Constructing a Tree With Two End Vertices and Minimum Length"

Tbilisi, Nekotor. zadachi raspoznavaniya obrazov i teorii grafov--sbornik (Some Problems of Pattern Recognition and the Theory of Graphs--collection of works), "Metsnereba", 1972, pp 74-80 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V393 by I. Sigal)

Translation: The paper deals with the problem of constructing a tree on a set of trees $T = \{T_i\}$, $i = 1, 2, \dots, k$, and on a set of isolated vertices $t = \{t_j\}$, $j = 1, 2, \dots, m$. In order to construct a tree in the given problem without adding new vertices, it is necessary and sufficient to add $m+k-1$ edges without forming cycles. The paper poses the problem of constructing a tree such that the sum of the lengths of the added edges is a minimum.

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- 27 -

USSR

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KURIK, M. V., FOZHKO, A. Kh.

"On the Determination of Optical Density of Semiconductor Layers on Transparent Substrates"

Leningrad, Optika i Spektroskopiya, Vol 34, No 3, Mar 73, pp 532-534

Abstract: The authors investigate a method of determining the optical density of a semiconductive film on a substrate which is transparent in the region of absorption of the film. The procedure is based on evaluating the expression $(R-R')/T$, where R and R' are experimentally determined values of reflection from the film and from the substrate respectively, and T is the transmission of the film. This eliminates the effect of interference due to repeated reflection from the boundary regions of the film. An analysis is made of the possible errors of the method when different measurement procedures are used. The authors thank M. P. Lisitsa and all participants in the Seminar of the Optics Department of the Institute of Semiconductors of the Ukrainian Academy of Sciences for constructive criticism.

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1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--TEMPERATURE DEPENDENCE OF THE DAVYDOV SPLITTING IN ANTHRACENE -U-
AUTHOR--KURIK, M.V., PIRYATINSKIY, YU.P., POPEL, O.M., FROLOVA, E.K.
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DAVYDOV SPLITTING FOR
PHOTOCONDUCTIVITY AND ABSORPTION IN ANTHRACENE HAS BEEN MEASURED IN A
WIDE TEMPERATURE RANGE. A PHENOMENOLOGICAL THEORY IS DEVELOPED WHICH
EXPLAINS QUALITATIVELY THE OBSERVED REGULARITIES.

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AUTHOR--KURIK, M.V., PIRYATINSKIY, YU.P., POPEL, O.M., PROKOVA, E.K.
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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DAVYDOV SPLITTING FOR
PHOTOCONDUCTIVITY AND ABSORPTION IN ANTHRACENE HAS BEEN MEASURED IN A
WIDE TEMPERATURE RANGE. A PHENOMENOLOGICAL THEORY IS DEVELOPED WHICH
EXPLAINS QUALITATIVELY THE OBSERVED REGULARITIES.

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1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EXCITON PHONON INTERACTION IN CADMIUM SULFIDE -U-

AUTHOR--(02)-GNATENKO, YU.P., KURIK, M.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERO, TELA 1970, 12(4), 1143-B

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SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--CADMIUM SULFIDE, PHONON, EXCITON, ABSORPTION BAND SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0378

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ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. INVESTIGATIONS WERE CARRIED OUT OF THE URBACH RULE AND THE SHAPE OF THE A ABSORPTION BAND AT 4.2-300 DEGREES K. IT FOLLOWS FROM THE ANAL. OF THE URBACH RULE THAT EXCITON PHONON INTERACTION IN COS AT LOW TEMPS. IS WEAK, THE MAGNITUDE OF INTERACTION BEING APPROX. 0.27. THE LONG WAVELENGTH BRANCH OF THE EXCITON ABSORPTION BAND IN COS IS FORMED BY PHONONS, THE ENERGY OF WHICH IS CLOSE TO THE ENERGY OF TRANSVERSE ACOUSTICAL PHONONS. THE SHAPE OF THE A ABSORPTION BAND IS APPROXIMATED BY THE VOIGHT FUNCTION. THE PARAMETERS OF THIS FUNCTION WERE DETD. FROM THE TEMP. DEPENDENCE OF THE SHAPE OF THE ABSORPTION BAND, IT WAS FOUND THAT THIS ABSORPTION BAND IS FORMED MAINLY BY PHONONS CLOSE IN ENERGY TO LONGITUDINAL OPTICAL PHONONS.

FACILITY: INST. FIZ., KIEV, USSR.

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1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--NONRADIATIVE TRANSFER OF ELECTRONIC EXCITATION BETWEEN ANTHRACENE
AND NAPHTHACENE IN A NAPHTHALENE CRYSTAL -U-
AUTHOR--(02)--KURIK, M.V., FROLOVA, YE.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 585-8

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TOPIC TAGS--ABSORPTION SPECTRUM, LUMINESCENCE SPECTRUM, NAPHTHALENE,
ANTHRACENE, CRYSTAL STRUCTURE, EXCITED STATE

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DOCUMENT CLASS--UNCLASSIFIED
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